

DESCRIPTION OF A NEW SPECIES OF *TORYMUS* FROM SCOTLAND,
WITH NOTES ON OTHER BRITISH SPECIES OF THE GENUS, &c.

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TORYMUS CAMPANULÆ, *sp. n.*

Green or bluish-green, pilose; antennæ black, the scape on the under-side yellow; the 2nd joint of the flagellum slightly longer than broad. Legs yellowish, the greater part of the coxæ and of the posterior femora green; the four anterior femora with a greenish line on the outer side, and slightly brownish on the other side; posterior tibiæ fuscous, except at base and apex; the apex of tarsi fuscous; the calcaria short, scarcely a third of the metatarsus in length. Abdomen compressed, longer than thorax; ovipositor as long as abdomen and two-thirds of the thorax.

The ♂ has the scape green on the under-side, and agrees otherwise in coloration with the ♀, except one specimen, which has the head, thorax, posterior coxæ, and abdomen suffused with bronzy splashes. The wings are hyaline; the costa with a hair-fringe.

Length, 2—3 mm.

Of the species in my collection it comes closest in coloration and length of ovipositor to *T. hibernans*, Mayr, but it is a narrower insect, the abdomen is longer compared with the thorax, and more compressed, the antennæ longer, and the spurs much shorter.

Bred in July and August from the galls of *Cecidomyia campanulæ*, Müller; found in various parts of Clydesdale. Dr. Gustav Mayr has kindly examined specimens, and has confirmed my opinion as to its being an undescribed species.

Torymus viridis, Förster, Beitr. z. Mon. d. Pter., 1841, p. 32; Mayr, Verh. z.-b. Ges. Wien, xxiv, p. 123, 4; I find this near Glasgow in galls of *Rhodites eglanteriæ*.

Torymus tipularum, Zett., Ins. Lapp., 1840, p. 420; Mayr, *l. c.*, 111, 27; Thoms., Hymen. Scand., iv, 95, 26; = *Torymus pumilus*, Ratz., Ichn. d. Förstins., i, 1844, p. 180; this I have bred here from the rose galls of *Cecidomyia rosaria* on willows.

Torymus sodalis, Mayr, *l. c.*, 120, 36, I found last October ovipositing at Milngavie in the galls of *Neuroterus lenticularis*. The ovipositor was inserted at the side, under the flat projecting part of the gall, which was then a little swollen. It would seem to be a good species, and readily distinguished from the other spangle-gall *Torymus (hibernans)* by its shorter ovipositor.

Torymus juniperi, Linné, Fauna Suec., 408, 1635, *sec.* Mayr, *l. c.*, 109, 23, I reared this spring in abundance from the galls of *Hormomyia juniperina* collected last year on Clober Moor. It is apparently identical with *T. amethystinus*, Boh., Vet. Ac. Handl., 1833, p. 370; and Thoms., Hymen. Scand., iv, 85, 10.

Torymus caudatus, Boh., Vet. Ac. Handl., 1833, p. 365, *sec.* Thoms., Hymen. Scand., iv, 84, 6, has been sent me by Mr. J. E. Fletcher, who reared it from fir cones collected in the hopes of rearing *Coccya strobilana*. Mayr (*l. c.*, p. 100) considers *caudatus* to be a variety of *azureus*, Boh., in which opinion I am inclined to agree with him, for the two forms (*azureus* and *caudatus*) appear to merge together when we examine a large number of specimens, while they both frequent fir-cones. *T. azureus* is the form which I recorded Trans. Ent. Soc., 1879, p. 119. It has the ovipositor shorter than in *caudatus*, and generally the colour is violet and not obscure green, as in the last mentioned. Thomson regards them as two distinct species.

I find that these insects are much better examined by setting them on silver wire than by carding them, as is usually done in this country. Not only are much better results obtained by this method, but much time is saved the student, the sticking of a wire through an insect taking up far less time than spreading out its legs, wings, &c., by means of needles and gum on cardboard; while, not unfrequently by the latter method, unless great care be taken to display the various parts, the form of the joints of the antennæ and legs cannot satisfactorily be made out; it may be owing to the employment of too much gum, or to the parts not being displayed sufficiently. The method is very simple. All that is required is to get silver wire* of the thickness required, cut it up in lengths (say 4 lines each), taking care to cut off the points as obliquely as possible; stick one of these through the thorax of your insect; then insert the wire with the insect on it in a piece of pith (that of the Jerusalem artichoke will do), which may hold only one insect or several, according to taste; finally, place an ordinary pin through the piece of pith, and, by means of it, stick the whole in the cabinet. If all this be done properly, no part of the insect need be disturbed, which would certainly be the case if ordinary pins be employed for the smaller species.

I do not, however, mean to say, that carding has no advantages. The above remarks refer only to *Chalcididæ*. I have not succeeded so well with *Oxyura* and parasitic *Cynipidæ*, owing to their much harder and smoother bodies; these insects are not easily pinned, the wire generally slipping off, while the successive attempts to insert it usually lead to the destruction of the insect. Such, at any rate, has been my experience; but no doubt, with greater experience, the difficulty might be got over. My views on the comparative advantages of carding and pinning *Hymenoptera* I have stated elsewhere (Proc. Nat. Hist. Soc. Glasg., 1877, p. 144), so I need not refer to the subject here.

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* Silver wire of any thickness may be had from Corney & Co., 70, Little Britain, London, E.C.